



United States
Department of
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Forest Service

FOREST PEST MANAGEMENT

Technology Update

Southeastern Area, State and Private Forestry, 1720 Peachtree Road, N.W., Atlanta, Ga. 30367

Southern Pine Beetle Fact Sheet Number 19

A METHOD FOR ASSESSING THE IMPACT OF SOUTHERN PINE BEETLE DAMAGE ON ESTHETIC VALUES

Description.—Researchers at Virginia Polytechnic Institute and State University demonstrated a technique for evaluating the effect of southern pine beetle (SPB) infestations on scenic quality. The object of the research was to detect variations in the satisfaction people received from viewing several forest landscapes with different amounts of SPB damage.

Methodology.—Color slide photographs, depicting various degrees of SPB infestation in forest stands, were shown to a subject group. The photos, taken along the Blue Ridge Parkway, were as similar as possible in scenic portrayal. Only the extent of SPB infestation differed among the slides. The degree of infestation ranged from 0 to 68 percent of the area shown in the slides.

The subject group was composed of forestry students, practicing foresters, Sierra Club members, and residents of Arlington, Va. Subjects were asked to view pairs of slides and express their preference as to which scene was less esthetically pleasing. All possible combinations of slides were shown.

Prior to the viewing, part of the subject group was told that the slides depicted beetle damage, while the remaining subjects were only told that they would be participating in a scenic preference experiment. When the viewing was completed, the

researchers converted the expressed preferences into a numerical, ordinal scale and developed a regression equation that related the level of preference to the degree of beetle damage.

Results.—The experiment showed that the satisfaction the subjects received from viewing forest landscapes declined as SPB damage increased. Satisfaction declined substantially when scenes with no SPB damage were compared to scenes having 4 percent or greater damage. However, beyond the 10 percent damage level, satisfaction declined only slightly. This indicates that "...people evaluate beetle-damaged forests almost as a dichotomy—damaged and undamaged—and that it is less important to prevent additional damage than to prevent outbreaks in the first place." (Buhyoff, 1978.)

The results of the experiment also showed that the subjects who knew they were viewing beetle damage had stronger feelings toward the damage than did the subjects who were unaware that what they were viewing was SPB damage.

Comments.—This experiment was repeated at a later date with different subjects, using color prints instead of slides. The results were virtually the same.

The methodologies used in this assessment employed expertise in statistics, mathematics, and psychology.

For further information, contact: Economist; USDA Forest Service; Southeastern Area, FPM; 1720 Peachtree Rd. N.W., Suite 710, Atlanta, Ga. 30367, (404) 881-2961.

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